

WHAT IS CLAIMED IS:

1. A system comprising:

a first storage unit system connected to a computer and having a first disk device and a first controller;

a second storage unit system having a second disk device and a second controller; and

a third storage unit system connected to said first storage unit system and said second storage unit system and having a third storage area and a third controller,

wherein said first controller responds to a write request received from said computer to transmit to said third storage unit system a journal including write data received from said computer and address information indicative of a position at which said write data is written,

stores said write data in said first disk device, and

returns a response to said write request to said computer after transmitting said journal, and

wherein said second controller receives first control information issued by said first controller and including a storage position of said journal used when said second storage unit system acquires said journal,

acquires said journal from said third storage unit system on the basis of said first control information, and

stores said write data in said second disk device on the basis of the address information included in said journal.

2. A system according to claim 1,
wherein said first storage unit system stores said first control information;

wherein said second controller acquires said journal and thereafter issues second control information indicative of the acquisition of said journal; and

wherein said first controller acquires said second control information and thereafter makes said first control information stored in said first storage unit system ready to be discarded.

3. A system according to claim 2,
wherein said first controller transmits said first control information to said third storage unit system and said second controller acquires said first control information stored in said third storage area from said third storage unit system; and

wherein said second controller transmits said second control information to said third storage unit system and said first controller acquires said second control information stored in said third storage area from said third storage unit system.

4. A system according to claim 3,
wherein said third storage unit system stores said first control information and said second control

information in different logical volumes inside said third storage area, respectively, and makes such setting that a write request from either of said first and second storage unit systems is to be permitted in respect of each logical volume.

5. A system according to claim 3,
 wherein in the event that a fault takes place in said first storage unit system, said second storage unit system consults the first control information stored in said third storage unit system to acquire a journal having write data not stored in said second disk device from said third storage unit system, and stores write data included in the acquired journal in said second disk device on the basis of address information included in said acquired journal.

6. A system according to claim 5,
 wherein when receiving a write request from a computer connected to said second storage unit system after a fault takes place in said first storage unit system, said second storage unit system has difference information indicative of a storage position of write data written in accordance with said write request; and

 wherein when said first storage unit system recovers from the fault, said second storage unit system transmits the data stored at the storage position indicated by said difference information to said first storage unit system through a communication path connecting said first storage unit system and said

second storage unit system.

7. A system according to claim 2 further comprising a communication path connected to said first storage unit system and said second storage unit system,

wherein said first controller transmits said first control information to said second storage unit system through said communication path; and

wherein said second controller transmits said second control information to said first storage unit system through said communication path.

8. A system according to claim 7,

wherein when a fault takes place in said third storage unit system, said first controller transmits write data received from said computer to said second controller through said communication path, and said second controller stores the write data received through said communication path in said second disk device.

9. A system according to claim 3 further comprising a fourth storage unit system connected to said first storage unit system and said second storage unit system,

wherein when a fault takes place in said third storage unit system, said first storage unit system and said second storage unit system transmit/receive therebetween a journal, first control information and second control information through said

fourth storage unit system.

10. A system according to claim 3 further comprising a fourth storage unit system connected to said first storage unit system and said second storage unit system,

wherein said first controller transmits a journal having time information to either of said third storage unit system and said fourth storage unit system; and

wherein said second controller acquires the journal from said third storage unit system or said fourth storage unit system and writes write data included in the acquired journal to said second disk device in order of times indicated by the time information assigned to said journal.

11. A remote copy method for use in a system having a first storage unit system connected to a computer and having a first disk device, a second storage unit system having a second disk device and a third storage unit system connected to said first storage unit system and said second storage unit system, said method being executed among said first storage unit system, second storage unit system and third storage unit system and comprising:

a write request receiving step of causing said first storage unit system to receive a write request and write data from said computer;

a journal writing step of causing said first

storage unit system to write a journal having said write data and address information included in said write request to said third storage unit system;

a first control information issuing step of causing said first storage unit system to issue first control information including a storage position of said journal necessary for said second storage unit system to read said journal;

a first control information acquiring step of causing said second storage unit system to acquire said first control information;

a journal reading step of causing said second storage unit system to read said journal on the basis of said first control information; and

a write data writing step of causing said second storage unit system to store the write data included in said journal in a disk device owned by said second storage unit system in accordance with the address information included in said journal.

12. A remote copy method according to claim 11, wherein said first storage unit system stores said first control information,

said method further comprising:

a second control information issuing step of causing said second storage unit system to issue, after said journal reading step, second control information indicating that said second storage unit system reads said journal; and

a second control information receiving step of causing said first storage unit system to receive said second control information,

wherein said first storage unit system discards said first control information after receiving said second control information.

13. A remote control method according to claim 11,

wherein said first control information issuing step has a step of writing said first control information into said third storage unit system; and

wherein said first control information acquiring step has a step of reading said first control information from said third storage unit system.

14. A remote copy method according to claim 13,

wherein said third storage unit system stores said first control information and said second control information in different logical volumes inside a third storage area, respectively, and makes such setting that a write request from either of said first and second storage unit systems is to be permitted in respect of each logical volume.

15. A remote copy method according to claim 13 further comprising:

a step of causing, in the event that a fault takes place in said first storage unit system, said second storage unit system to acquire from said third storage unit system a journal having write data not

stored in said disk device owned by said second storage unit system by consulting said first control information stored in said third storage unit system; and

a step of causing said second storage unit system to store, on the basis of address information included in the acquired journal, write data included in said acquired journal in said disk device said second storage unit system has.

16. A remote copy method according to claim 15 further comprising:

a step of causing said second storage unit system to receive a write request from a computer connected to said second storage unit system in the event that a fault takes place in said first storage unit system;

a step of causing said second storage unit system to hold difference information indicative of a storage position of write data written in accordance with said write request; and

a step of causing, when said first storage unit system recovers from the fault, said second storage unit system to transmit the data stored at the storage position indicated by said difference information to said first storage unit system through a communication path connecting said first storage unit system and said second storage unit system.

17. A remote copy method according to claim 11,

wherein said first storage unit system and said second storage unit system are connected to each other by a communication path;

wherein said first control information issuing step has a step of causing said first storage unit system to transmit said first control information to said second storage unit system through said communication path; and

wherein said first control information acquiring step has a step of causing said second storage unit system to receive said first control information from said first storage unit system through said communication path.

18. A remote copy method according to claim 17 further comprising, when a fault takes place in said third storage unit system:

a step of causing said first storage unit system to transmit write data received from said computer to said second storage unit system through said communication path; and

a step of causing said second storage unit system to store the write data received via said communication path in said disk device said second storage unit system has.

19. A remote copy method according to claim 13,

wherein said system further comprises a fourth storage unit system connected to said first storage unit system and said second storage unit

system; and

wherein when a fault takes place in said third storage unit system, said first and second storage unit systems transmit/receive a journal and first control information therebetween through said fourth storage unit system.

20. A remote copy method according to claim 13,

wherein said system further comprises a fourth storage unit system connected to said first storage unit system and said second storage unit system;

wherein said journal writing step has a step of causing said first storage unit system to write a journal having time information to either of said third and fourth storage unit systems; and

wherein said second controller acquires the journal from said third and fourth storage unit systems and writes write data contained in the acquired journal to said second disk device in order of times indicated by said time information assigned to said journal.